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EXAMINER	
EWART, JAMES D	
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2683	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/676,402	DAVIES, DOUGLAS ALLAN	
	Examiner	Art Unit	
	James D Ewart	2683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment B, March 29, 2004* .

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-28* is/are rejected.

7)☒ Claim(s) *29* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

Response to Arguments

1. The applicant's arguments regarding the prior art rejections under 35 U.S.C. 103(a), filed March 24, 2004, have been fully considered by the Examiner, but are not deemed persuasive.

2. The applicant's arguments regarding tentative location, determining the optimum location, switching device are deemed to be moot in grounds of new rejection.

3. Regarding Applicant's argument that the Sole reference is used only after a subscriber site has been chosen, Examiner agrees. However, Examiner indicates in the rejection that Sole does not teach evaluating a location for a fixed subscriber site. The location of the fixed subscriber site of Sole's must have been chosen at some point and Examiner uses the van der Vorm et al reference for this limitation. Van der Vorm et al teaches determining base station locations. The van der Vorm et al and Sole combination would thus be determining a location of a fixed subscriber site. Van der Vorm et al teaches determining the maximum of a location-dependent field strength to be generated by the base station and Examiner equates this with optimum location. The field strength is either measured or predicted, Examiner equates Applicant's tentative location with van der Vorm's process of measuring the field strength in various locations.

4. Regarding Applicant's argument that there is no motivation in the Sole reference to have an upstream communication link to the base station, Sole teaches in Column 1, Lines 59-63 that: "the antenna is operable as a scanning antenna to scan and thereby determine a communication

link with a selected one of a plurality of base stations and in a second mode is operable as a communication antenna to communicate with the selected one of the plurality of base stations"

5. Regarding claim 11, Applicant argues that the Jackson reference is used for satellite communication and is not relevant to the field of Applicant's invention. Sole teaches a movable communication antenna which optimally orients itself with a base station. Jackson teaches an antenna and mounting assembly permitting azimuth adjustment of antenna elevation and rotation of the antenna about a polarity axis to orient the antenna with respect to the antenna it is communicating with. Jackson states in Column 7, Lines 5-7 that: "the mounting configuration of the invention can also be used with other satellite and terrestrial antenna types". Being that both references teach orienting an antenna and Applicant teaches orienting an antenna, Examiner argues that both references are relevant to Applicant's invention.

6. Regarding claims 12 and 13, Applicant argues that Kim et al. does not teach attenuating a received signal at a tentative subscriber site for evaluating its suitability for a particular base station. Examiner argues that the Kim reference in claims 12 and 13 is used to show a teaching of attenuating a signal to simulate environmental noise conditions.

7. Regarding claim 18, Applicant argues that there is no motivation to collectively combine the references used in the rejection to simulate atmospheric conditions using a testing system as described in claim 18. The van der Vorm et al and Sole combination teach determining a location of a fixed subscriber site. Examiner argues that the fixed subscriber station, of the van der Vorm et al and Sole combination, would be prone to atmospheric conditions and thus testing

of atmospheric conditions would be an integral part of the testing. Applicant further argues that the Heuer reference is not of the same field as the other references and that there is no motivation to combine the references used with Heuer. Examiner argues that since testing is being performed and Heuer teaches a testing method, Heuer is related and the motivation to combine as indicated in the rejection is to determine a threshold setting corresponding to a failure level.

8. Regarding Applicant's argument that there is no motivation to search each field of each piece of prior art to develop a system similar to Applicant's invention, Examiner argues that there are no limitations as to the number of references that can be combined. If a reference used is related to an Applicant's invention and there is motivation to combine references, these references should be applied. Otherwise, an Applicant could simply mix and match pieces of prior art together to create a new invention.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 1-3, 10,14,15, 17, 21, and 24 - 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al. (U.S. Patent No. 6,150,987) in view of Taylor et al (U.S. Patent No. 4,859,933) in view of McGill (U.S. Patent No. 6,285,339) in view of van der Vorm et al. (U.S. Patent No. 5,787,350) and further in view of Kim et al (U. S Patent No. 6,456,652).

Referring to claim 1, Sole et al teaches a wherein wireless communication signals are transmitted between a base station and the fixed subscriber communication site (Column 1, Lines 4,5 & 57-63); an antenna positionable at said location of fixed subscriber communication site for communicating said wireless communication signals; an adjustable mount associated with said antenna for enabling orienting of said antenna in a plurality of pan orientations (Figure 2); wherein said adjustable mount is fixed in a set pan orientation of said plurality of pan orientations said communication unit measures said characteristics of said wireless communication signals (Column 2, Lines 18-20), but does not teach an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights at said location and said adjustable boom is fixed at one of said plurality of heights when making measurements. Taylor et al teaches an adjustable an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements (Column 7, Lines 4-8 and 21-23). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al with the teaching of Taylor et al of using an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements to vary the site conditions (Column 19, Line 20). Sole et al and Taylor et al teach the limitations of claim 1, but do not teach a plurality of tilt orientations; and a set tilt orientation of said plurality of tilt orientations. McGill teaches a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations (Column 1, Line 66 to Column 2, Line 4 and Figure 2). Therefore at the time the invention was made, it would have

been obvious to a person of ordinary skill in the art to combine the art of Sole et al and Taylor et al with the art of McGill of a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations to position a load in a desired angular orientation (Column 2, Line 48-49). Sole et al, Taylor et al and McGill teach the limitations of claim 1, but do not teach evaluating an optimum location for a fixed communication site by evaluating tentative locations for the fixed communication site. van der Vorm et al. teaches evaluating an optimum location (Column 3, Lines 37-43) for a fixed communication site by evaluating tentative locations (Column 5, Lines 31-33) for the fixed communication site (Column 3, Lines 37-52). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al and McGill with the teaching of van der Vorm et al. of evaluating an optimum location for a fixed communication site by evaluating tentative locations for the fixed communication site in an area which is subdivided into subareas using a method that is less labor intensive (Column 1, Lines 7-9, 26-28). Although Sole et al discusses measuring and recording signal levels and interference levels he does not specifically teach a signal testing system. Kim et al teaches a signal testing system (Figure 1). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al, McGill, and van der Vorm et al. with the art of Kim et al of using a signal testing system to measure signal quality parameters (Column 2, Lines 5-6).

Referring to claim 2, Kim et al further teaches wherein said testing system receives wireless communication signals sent downstream from said base station to said testing system (Figure 1), said antenna receives said wireless communication signals (Figure 1) and

communication unit receives said wireless communication signals from said antenna (Figure 1) and measures characteristics of said wireless communication signals (Column 2, Lines 3-8).

Referring to claim 3, Kim et al further teaches wherein said testing system transmits wireless communication signals upstream to said base station from said testing system (Column 2, Lines 3-14 and Figure 1), said antenna receives wireless communication signals from said base station (Figure 1), said communication unit receives said wireless communication signals (Column 2, Lines 3-14 and Figure 1) from said antenna and said communication unit measures characteristics of said wireless communication signals (Column 2, Lines 3-8).

Referring to claim 10, McGill further teaches a controller to orient said mount in one of said plurality of pan orientations and one of said plurality of tilt orientations (Column 2, Lines 22-25).

Referring to claim 14, Sole et al further teaches a method wherein wireless communication signals are communicated a fixed subscriber communication site and a base station (Column 1, Lines 4,5 & 57-63), wherein an antenna for communicating said wireless communication signals with said base station, an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations (Figure 2), but does not teach an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights at said location and said adjustable boom is fixed at one of said plurality of heights when making measurements and integrating the power of said wireless communication signals across a frequency band associated with said wireless communication signals. Taylor et al

teaches an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements (Column 7, Lines 4-8 and 21-23) and integrating the power of said signals across a frequency band associated with said signals (Column 4, Lines 32-34). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al with the teaching of Taylor et al of using an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements to vary the site conditions (Column 19, Line 20). Sole et al and Taylor et al teach the limitations of claim 1, but do not teach a plurality of tilt orientations; and a set tilt orientation of said plurality of tilt orientations. McGill teaches a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations (Column 1, Line 66 to Column 2, Line 4 and Figure 2). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al and Taylor et al with the art of McGill of a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations to position a load in a desired angular orientation (Column 2, Line 48-49). Sole et al,Taylor et al and McGill teach the limitations of claim 1, but do not teach establishing an optimum location for a fixed communication site by evaluating tentative locations for the fixed communication site. van der Vorm et al. teaches establishing an optimum location (Column 3, Lines 37-43) for a fixed communication site by evaluating tentative locations for the fixed communication site (Column 3, Lines 37-52). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et

al,Taylor et al and McGill with the teaching of van der Vorm et al. of establishing an optimum location for a fixed communication site by evaluating tentative locations for the fixed communication site to determine base station locations in an area which is subdivided into subareas using a method that is less labor intensive (Column 1, Lines 7-9, 26-28). Although Sole et al discusses measuring and recording signal levels and interference levels he does not specifically teach a signal testing system. Kim et al teaches a signal testing system (Figure 1). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al,Taylor et al, McGill, and van der Vorm et al. with the art of Kim et al of using a signal testing system to measure signal quality parameters (Column 2, Lines 5-6).

Referring to claim 15, Kim et al further teaches variably attenuating said wireless communication signals before evaluating said characteristics of said wireless communication signals to simulate ambient atmospheric and meteorological conditions around said wireless testing system (Figure 1, 14).

Referring to claim 17, Kim et al further teaches evaluating said characteristics of said wireless communication signals received by said wireless testing system from said base station (Column 2, Lines 3-8).

Referring to claim 21, Sole et al further teaches wherein said wireless communication signals are downstream wireless signals generated by said base station in response to upstream wireless signals received from said testing system (Column 2, Lines 2-3).

Referring to claim 24, van der Vorm further teaches further comprising: performing said step of evaluating for a plurality of tentative locations (Column 3, Lines 37-52) to obtain a plurality of measured characteristics for said wireless communication signals associated with a respective tentative location (Column 3, Lines 37-52); comparing said measured characteristics for said plurality of tentative locations (Column 3, Lines 37-52); and selecting as said optimal location a tentative location that has an optimal measured characteristic (Column 3, Lines 37-43).

Referring to claim 25, van der Vorm further teaches wherein said characteristic is the power of said wireless communication signals (Column 3, Lines 49-50), but does not teach integrating over the frequency band associated with said wireless communication signals. Taylor et al teaches integrating over the frequency band associated with said wireless communication signals (Column 4, Lines 32-34 and Figure 1). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of van der Vorm with the teaching of Taylor et al of integrating over the frequency band associated with said wireless communication signals to measure signals at various spectral locations (Column 2, lines 44-46).

Referring to claim 26, Sole et al teaches a wherein wireless communication signals are exchanged between a base station and the fixed subscriber communication site (Column 1, Lines 4,5 & 57-63); an antenna, with adjustable pan orientation, at said location of fixed subscriber communication site for communicating said wireless communication signals; said

communication unit measures said characteristics of said wireless communication signals (Column 2, Lines 18-20), but does not teach an adjustable boom positioning said antenna at a plurality of heights. Taylor et al teaches an adjustable boom positioning said antenna at a plurality of heights (Column 7, Lines 4-8 and 21-23). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al with the teaching of Taylor et al of using an adjustable boom positioning said antenna at a plurality of heights to vary the site conditions (Column 19, Line 20). Sole et al and Taylor et al teach the limitations of claim 1, but do not teach adjustable tilt orientations. McGill teaches adjustable tilt orientations (Column 1, Line 66 to Column 2, Line 4 and Figure 2). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al and Taylor et al with the art of McGill of providing adjustable tilt orientations to position a load in a desired angular orientation (Column 2, Line 48-49). Sole et al,Taylor et al and McGill teach the limitations of claim 26, but do not teach establishing an optimum location for a fixed communication site by evaluating tentative locations for the fixed communication site wherein the evaluation includes measuring a characteristic of wireless communication signals and selecting one of said plurality of tentative locations as said optimal location if said characteristic thereof is better than the characteristics measured in all other tentative locations. van der Vorm et al. teaches establishing an optimum location (Column 3, Lines 37-43) for a fixed communication site by evaluating tentative locations (Column 5, Lines 31-33) for the fixed communication site (Column 3, Lines 37-52) wherein the evaluation includes measuring a characteristic of wireless communication signals (Column 3, Lines 37-52) and selecting one of said plurality of tentative locations as said optimal location if said

characteristic thereof is better than the characteristics measured in all other tentative locations (Column 3, Lines 37-43). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al and McGill with the teaching of van der Vorm et al. of establishing an optimum location for a fixed communication site by evaluating tentative locations for the fixed communication site wherein the evaluation includes measuring a characteristic of wireless communication signals and selecting one of said plurality of tentative locations as said optimal location if said characteristic thereof is better than the characteristics measured in all other tentative locations in an area which is subdivided into subareas using a method that is less labor intensive (Column 1, Lines 7-9, 26-28). Although Sole et al discusses measuring and recording signal levels and interference levels he does not specifically teach a signal testing system comprising an antenna and a communication unit. Kim et al teaches a signal testing system comprising an antenna and a communication unit (Figure 1). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al,Taylor et al, McGill, and van der Vorm et al. with the art of Kim et al of using a signal testing system to measure signal quality parameters (Column 2, Lines 5-6).

Referring to claim 27, Taylor et al further teaches wherein said characteristic; is the power of said wireless communication signals integrated over the frequency band associated with said wireless communication signals (Column 4, Lines 32-34 and Figure 1).

Referring to claim 28, van der Vorm et al further teaches further comprising establishing an optimal spot for said antenna at each of said plurality of tentative locations (Column 5, Lines 27-34 and Column 8, Lines 5-20).

10. Claims 4 – 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al., Taylor et al, McGill, van der Vorm et al. and Kim et al and further in view of Grube et al. (U.S. Patent No. 5,361,402).

Referring to claim 4, Sole et al further teaches wherein said communication unit comprises a signal measurement device to measure characteristics of said wireless communication signals communicated with said base station (Column 2, Lines 3-8); a network interface unit to process said wireless communication signals communicated with said base station (Figure 1), but does not teach a switching device connected to said network interface unit alternatively to said antenna and said signal measurement device. Grube et al teaches a switching device connected to said network interface unit alternatively to said antenna and said signal measurement device (Figure 1; 101). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al., Taylor et al, McGill, van der Vorm et al. and Kim et al with the teaching of Grube et al of a switching device connected to said network interface unit alternatively to said antenna and said signal measurement device to analyze transmission parameters of outbound signals (Column 2, Lines 16-17).

Referring to claim 5, Sole et al teaches measuring the said wireless communication signals but does not teach wherein said signal measurement device is a signal analyzer for measuring the power of the signal over the transmission band associated with said signals. Taylor et al teaches signal measurement device is a signal analyzer for measuring the power of the signal over the transmission band associated with said signals (Column 4, Lines 32-34 and Figure 1). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al with the teaching of Taylor et al wherein the signal measurement device is a signal analyzer for measuring the power of the signal over the transmission band associated with said signals to measure signals at various spectral locations (Column 2, lines 44-46 and Figure 1).

Referring to claim 6, Kim et al further teaches wherein said network interface unit is a modem (Figure 1 and Column 2, Lines 3-8). A modem is required to interface with a cellular network.

Referring to claim 7, Grube et al further teaches wherein said switching unit is a directional coupler connected to said antenna to direct said wireless communication signals and wherein said signal measurement device is connected to said coupler and said modem is connected to said coupler (Figure 1; 101).

Referring to claim 9, Kim et al further teaches wherein said testing system receives wireless communication signals sent downstream from said base station to said testing system (Figure 1), said antenna receives said wireless communication signals (Figure 1), said wireless

communication signals are provided to said modem (Figure 1) and measuring the characteristics of said wireless communication signals (Column 2, lines 3-8), but does not teach using a signal analyzer unit. Taylor et al teaches using a signal analyzer unit (Column 6, Lines 64-66). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Kim et al with the art of Taylor et al of using a signal analyzer unit to measure signals at various spectral locations (Column 2, lines 44-46).

11. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al., Taylor et al, McGill, van der Vorm et al. and Kim et al and further in view of DeJaco et al (U.S. Patent No. 5,784,406).

Referring to claims 8 and 16, Kim et al further teaches wherein said modem generates wireless communication signals, wireless communication signals are provided to said antenna, said antenna transmits wireless communication signals and Taylor et al teaches a signal analyzer measures characteristics of said wireless communication signals, but they do not teach transmitting said wireless communication signals back to said base station. DeJaco et al teaches transmitting said wireless communication signals back to said base station (Figure 1). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al with the art of DeJaco et al of transmitting said wireless communication signals back to said base station to quantitatively evaluate the quality of communication channels (Column 3, Lines 65-67).

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al and further in view of Jackson (U.S. Patent No. 6,188,372).

Referring to claim 11, Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al teach the limitations of claim 11, but do not teach a bracket attached to said antenna, said bracket allowing the positioning of said antenna at a plurality of angles along a plane to change a polarity of said wireless communication signals. Jackson et al teaches a bracket attached to said antenna, said bracket allowing the positioning of said antenna at a plurality of angles along a plane to change a polarity of said wireless communication signals (Column 1, Lines 11-14 and Column 2, Lines 38-45). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al with the teaching of Jackson et al of using a bracket attached to said antenna, said bracket allowing the positioning of said antenna at a plurality of angles along a plane to change a polarity of said wireless communication signals to provide the proper polarity plate without requiring the attachment of additional reference hardware (Column 2, Lines 30-31).

13. Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al and further in view of Kim et al. (6,456,652).

Referring to claims 12 and 13, Sole et al teaches said communication unit measuring said wireless communication signals, but does not teach said communication unit includes an attenuator in to selectively attenuate said wireless communication signals to produce attenuated signals simulating attenuating effects of ambient atmospheric and meteorological conditions around said communication site. Kim et al teaches base station includes an attenuator in to selectively attenuate said wireless communication signals to produce attenuated signals simulating attenuating effects of ambient atmospheric and meteorological conditions around said communication site (Figure 1, 22). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al with the teachings of Kim et al of using an attenuator in to selectively attenuate said wireless communication signals to produce attenuated signals simulating attenuating effects of ambient atmospheric and meteorological conditions around said communication site to simulate environmental noise conditions (Column 2, Lines 51-52).

14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al in view of Taylor et al in view of McGill in view of van der Vorm et al. in view of Kim et al and further in view of Heuer (U.S. Patent No. 5,663,968).

Referring to claim 18, Sole et al teaches a fixed subscriber communication site for communicating said wireless communication signals with said base station (Column 1, Lines 4,5 & 57-63), an adjustable mount associated with said antenna for orienting said antenna in a plurality of pan orientations (Figure 2), but does not teach an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights at said location and

said adjustable boom is fixed at one of said plurality of heights when making measurements. Taylor et al teaches an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements (Column 7, Lines 4-8 and 21-23). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al with the teaching of Taylor et al of using an adjustable boom associated with said adjustable mount for positioning said antenna at a plurality of heights and said adjustable boom is fixed at one of said plurality of heights when making measurements to vary the site conditions (Column 19, Line 20). Sole et al and Taylor et al teach the limitations of claim 1, but do not teach a plurality of tilt orientations; and a set tilt orientation of said plurality of tilt orientations. McGill teaches a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations (Column 1, Line 66 to Column 2, Line 4 and Figure 2). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Soleet al and Taylor et al with the art of McGill of a plurality of antenna tilt orientations; and a set tilt orientation of said plurality of tilt orientations to position a load in a desired angular orientation (Column 2, Line 48-49). Sole et al,Taylor et al and McGill teach the limitations of claim 1, but do not teach evaluating a location for a fixed communication site. van der Vorm et al. teaches evaluating a location for a fixed communication site (Column 3, Lines 37-52). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al,Taylor et al and McGill with the teaching of van der Vorm et al. evaluating a location for a fixed communication site to determine base station locations in an area which is subdivided into

subareas using a method that is less labor intensive (Column 1, Lines 7-9, 26-28). Although Sole et al discusses measuring and recording signal levels and interference levels he does not specifically teach a signal testing system wherein said signal testing system calculates ambient atmospheric and meteorological conditions corresponding to said amount of attenuation based on the distance between said antenna and said base station; and comparing said calculations of said atmospheric and meteorological conditions to a predetermined threshold level required to maintain a level of service required for communications with said base station when said atmospheric and meteorological conditions exist wherein, if said level of attenuation exceeds said threshold level, said antenna placement at said communication site is acceptable wherein attenuation occurs at said communication site / base station. Kim et al teaches a signal testing system (Figure 1) wherein said signal testing system calculates ambient atmospheric and meteorological conditions corresponding to said amount of attenuation based on the distance between said antenna and said base station (Column 2, Lines 49-60 and Column 4, Lines 52-57); and comparing said calculations of said atmospheric and meteorological conditions to a predetermined threshold level required to maintain a level of service required for communications with said base station when said atmospheric and meteorological conditions exist wherein, if said level of attenuation exceeds said threshold level, said antenna placement at said communication site is acceptable wherein attenuation occurs at said communication site / base station (Column 1, Line 53 – Column 2, Line 38 and Column 5, Lines 1-10). Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al,Taylor et al, McGill, and van der Vorm et al. with the art of Kim et al of using a signal testing system wherein said signal testing system calculates ambient

atmospheric and meteorological conditions corresponding to said amount of attenuation based on the distance between said antenna and said base station; and comparing said calculations of said atmospheric and meteorological conditions to a predetermined threshold level required to maintain a level of service required for communications with said base station when said atmospheric and meteorological conditions exist wherein, if said level of attenuation exceeds said threshold level, said antenna placement at said communication site is acceptable wherein attenuation occurs at said communication site / base station to measure signal quality parameters (Column 2, Lines 5-6). Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al, teach the limitations of claim 18, but do not teach attenuating communication signals until said signal measuring device no longer receives said communication signals. Heuer teaches attenuating said communication signals until said signal measuring device no longer receives said communication signals (Column 2, Lines 15-21). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al with the teaching of Heuer of attenuating communication signals until said signal measuring device no longer receives communication signals to determine a threshold setting corresponding to a failure level (Column 2, Lines 42-45).

15. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al, Taylor et al, McGill, van der Vorm et al., Kim et al, and Heuer and further in view of Kobayashi et al (U.S. Patent No. 5,442,811).

Referring to claim 19, Sole et al teaches wherein said wireless communication signals are upstream and downstream wireless signals, but does not teach, modulating test signals generated by said communication unit over an intermediary frequency. Kobayashi et al teaches modulating test signals generated by said communication unit over an intermediary frequency (Column 3, Lines 42-56). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al, McGill, van der Vorm et al., Kim et al, and Heuer with the teaching of Kobayashi et al of modulating test signals generated by said communication unit over an intermediary frequency to provide an economical radio transmitter/receiver (Column 3, Lines 40-41)

Referring to claim 20, Sole et al teaches the limitations of claim 20, but does not teach wherein the bandwidth of said wireless communication signals is 36 MHz centered about a 1.0 GHz frequency. The limitation of bandwidth and the center frequency of the wireless communication signals would not render the claims patentable over the applied references because it would merely depend on the bandwidth and center frequency picked for the wireless communication signals. Therefore at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to modify the art of Sole et al, Taylor et al, McGill, van der Vorm et al., Kim et al, and Heuer such that the bandwidth of said wireless communication signals is 36 MHz centered about a 1.0 GHz frequency to provide realistic signals to be tested.

16. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al., Taylor et al, McGill, van der Vorm et al., Kim et al and Grube et al. and further in view of Bass, Sr. (U.S. Patent No. 5,896,574).

Referring to claim 22, Sole et al., Taylor et al, McGill, van der Vorm et al., Kim et al and Grube et al. teach the limitations of claim 22, but do not teach wherein said network interface unit operates according to a plurality of communication protocols. Bass, Sr. teaches wherein said network interface unit operates according to a plurality of communication protocols (Column 5, Lines 22-23). Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine the Sole et al., Taylor et al, McGill, van der Vorm et al., Kim et al and Grube et al. combination with the teaching of Bass, Sr. wherein said network interface unit operates according to a plurality of communication protocols to provide a light-weight modem (Column 2, Lines 42-43).

17. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al and further in view of Heuer .

Referring to claim 23, Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al, teach the limitations of claim 23, but do not teach attenuating communication signals until said signal measuring device no longer receives said communication signals. Heuer teaches attenuating said communication signals until said signal measuring device no longer receives said communication signals (Column 2, Lines 15-21). Therefore, at the time the invention was

made, it would have been obvious to a person of ordinary skill in the art to combine the art of Sole et al, Taylor et al, McGill, van der Vorm et al. and Kim et al with the teaching of Heuer of attenuating communication signals until said signal measuring device no longer receives communication signals to determine a threshold setting corresponding to a failure level (Column 2, Lines 42-45).

Allowable Subject Matter

18. Claim 29 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 29, the references sited do not teach determining an offset 1 between a location of transmit and receive antennae at said base station; and adjusting positioning of said antenna based on receive and transmit signal strengths measured by said communication unit, whenever an angle a provided by $\tan \alpha = 1/d$ is greater than 1.5°.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Miller et al U.S. Patent No. 5,228,053 discloses spread spectrum cellular overlay CDMA communication system.

20. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James D Ewart whose telephone number is (703) 305-4826. The examiner can normally be reached on M-F 7am - 4pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Trost can be reached on (703)308-5318. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Ewart
May 28, 2004

WILLIAM TROST
SUPERVISORY PATENT EXAMINER
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